

upper section and a lower section; said lower section for holding liquid in said tube; said upper section having an indented portion so as to form a "v" shaped section above said central axis of said tube, a trough portion in connection with the inner surface of said tube and running parallel to said central axis, said trough portion having a curved surface so as to collect liquids that condense on said upper section, said tube being of substantially air tight construction and having a means for reducing the pressure inside said tube; said trough portion having a midline bisecting the length of said trough and said midline being oriented at an angle with respect to horizontal so as to urge the flow of liquid in one direction; wherein said upper section is composed of a photochromic material so as to get darker in color in response to changes in the intensity of the solar radiation.

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26. A distillation apparatus for use with solar radiation; said apparatus comprising: an enclosed tube for the flow of liquids, said tube having an inner surface and an outer surface and having a central axis running the length of said tube, said tube being of rigid construction and having an upper section and a lower section; said lower section for holding liquid in said tube; said tube being of substantially air tight construction and having a means for reducing the pressure inside said tube; said tube having a pair of trough portions running parallel to said central axis and each in connection with said inner surface of said tube, said trough portions located on opposite sides of said tube and said trough portions having a curved surface so as to collect liquids that condense on said upper section, said upper section having at least two indented portions and each of said indented portions disposed so that at least one said indented portion is above at least one of said trough portions, each of said trough portions being oriented at an angle with respect to horizontal so as to urge the flow of